Building with Nature: An approach for climate resilient infrastructure

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Global trend: Nature based Solutions for climate resilient infrastructure
However…..implementation and upscaling still proves seriously challenging.

WHY?
Nature Based Solutions are

… dynamic

… multi-functional

… innovative for dealing with water issues

… local and context-specific

You need to **think**, **act** and **interact** differently!
EcoShape | Building with Nature

• Sectors *collaborating* with a shared ambition
• Test and implement NbS concepts in practice
• Supported with fundamental knowledge
• Translated to practical design guidelines
• Developed in a collaborative network
• Aimed at upscaling and mainstreaming
Pilot Project Overview

Nature Based Flood Defences
- Houtrib Dike Pilot Project
- Sand Motor Delfland Coast
- Hondsbossche Dunes
- Sand engine lake IJssel
- Interreg VB North Sea Region project Building with Nature
- NatureCoast

Resilient Delta Cities
- Werven Park Dordrecht
- Tidal park Rotterdam
- CityDeal Klimaatadaptatie

Sustainable Port Development
- Living Lab for Mud
- Clay Ripening Pilot Project
- Building with Nature in Indonesia
- Salt marsh development Marconi Delfzijl
- Mud Motor Koehoal salt marsh development
- Marker Wadden KIMA

Ecosystem Restoration

building with nature
Demak: once a prosperous area
One of the districts that experienced severe erosion on the north coast of Central Java Province

- Abrasion, tidal flood, flooded settlement
- Damaged, abandoned and unproductive ponds
- Traditional solutions make it worse
Building with Nature Indonesia

Sustainable Water Fund
- Promote BwN approach rural mangrove setting

International Climate Initiative
- BwN approach all settings

ICZM provides resilience
- Coastal safety
- Aquaculture

Smart engineering and ecological rehabilitation

Sustainable land use practice

Mangrove greenbelt provides coastal safety enabling economy to prosper

A prosperous local economy enables maintenance of mangrove greenbelt
Bio-rights: 
Facilitating implementation of BwN measures
Coastal Field Schools boost aquaculture

**Challenges**
- Increased flooding due to subsidence & storms
- Changes in budget allocations
- Low women participation

**Highlights**
- > 400 ha of sustainable aquaculture, incl. riverine mangrove restoration
- 50 ha earmarked for coastal mangrove rehabilitation
- Average shrimp yield 3 - 20 x higher => income: 3 to 9 x higher
- Communities empowered
- Village & district budget allocated
- 7 out of 9 Villages have established village regulations on coastal management that support the protection of mangrove
- Sedimentation and mangrove growth naturally occur in several activity locations.
Mangrove Green Belt Rehabilitation

Highlights
- 9 km of permeable structures by MMAF & BwN consortium
- Ownership and maintenance transferred to community
- Village & district budget allocation
- Erosion has been halted!

Challenges
- Permeable structures require intensive maintenance
- Not sure if structures can keep up with severe subsidence in long term (nor will traditional infrastructure)
- Land speculation due to plans for industry development
Partnership is key
Enablers for Building with Nature implementation

- Technology and system knowledge
- Multi-stakeholder approach
- Management, monitoring and maintenance
- Institutional embedding
- Business case
- Capacity building
Accelerating Building with Nature in Asia
Thank you

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